TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC4793

Power Amplifier Applications

Driver Stage Amplifier Applications

- High transition frequency: f_T = 100 MHz (typ.)
- Complementary to 2SA1837

Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	230	V
Collector-emitter voltage		V_{CEO}	230	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	1	A
Base current		I_B	0.1	A
Collector power dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		20	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm

1. BASE
2. COLLECTOR
3. EMITTER

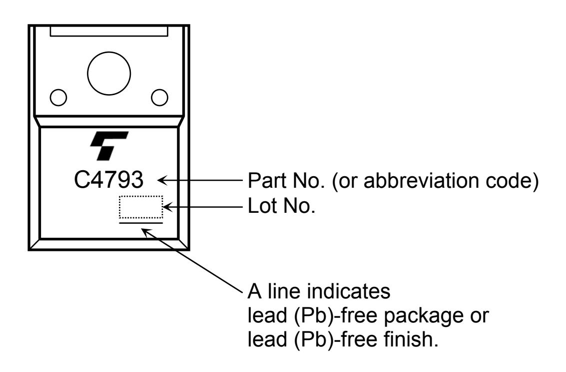
JEDEC	―
JEITA	―
TOSHIBA	2-10R1A

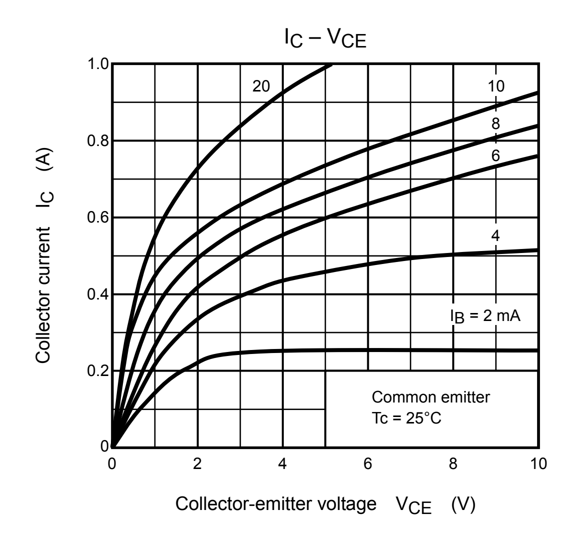
Weight: 1.7 g (typ.)

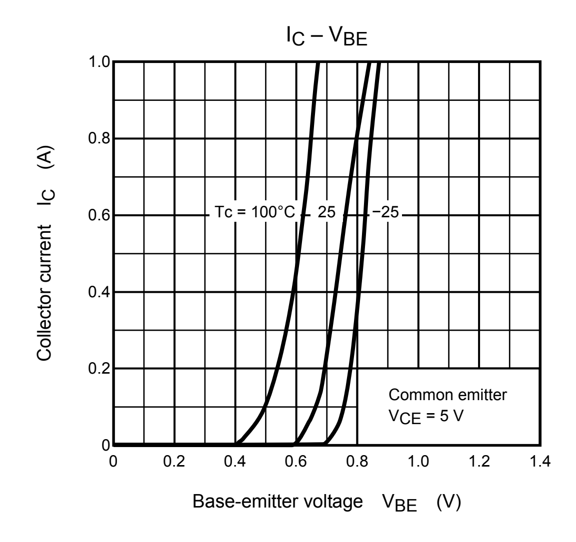
Electrical Characteristics (Tc = 25°C)

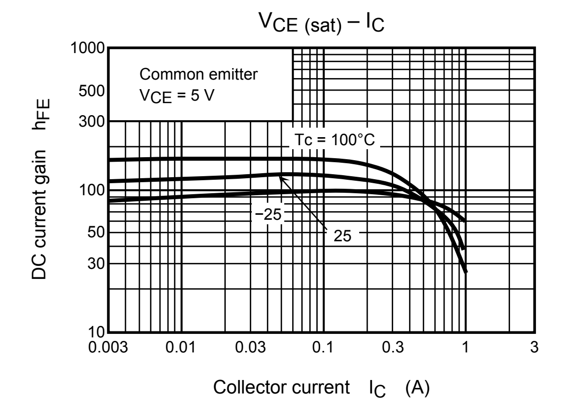
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 230 V, I_E = 0	—	—	1.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	1.0	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	230	—	—	V
DC current gain	h_{FE}	V_{CE} = 5 V, I_C = 100 mA	100	—	320	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 500 mA, I_B = 50 mA	—	—	1.5	V
Base-emitter voltage	V_{BE}	V_{CE} = 5 V, I_C = 500 mA	—	—	1.0	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 100 mA	—	100	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	20	—	pF

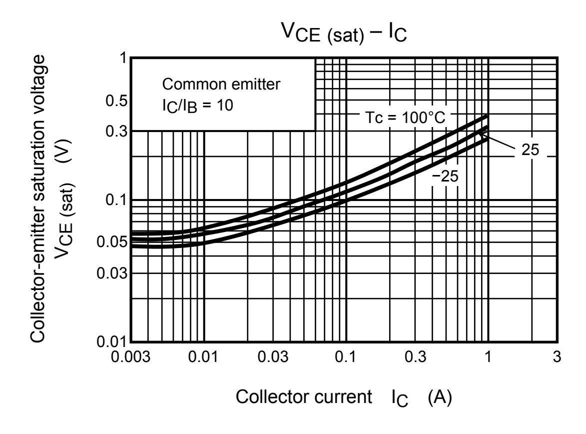
Marking

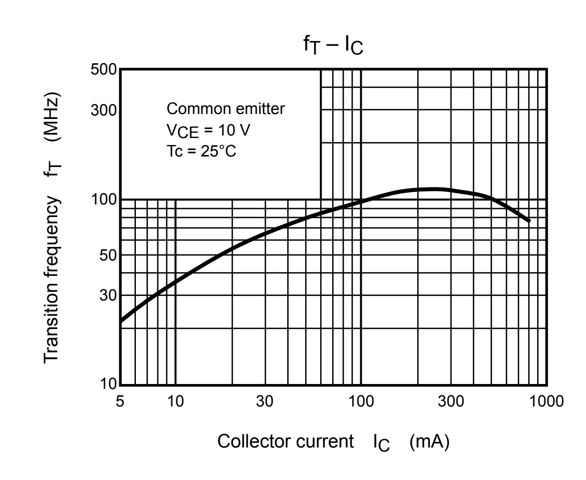


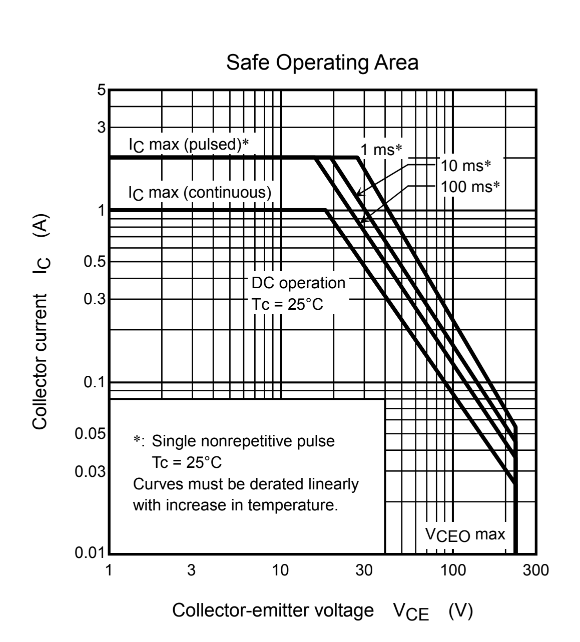

IC – VCE
Collector current IC (A)
Collector-emitter voltage VCE (V)
20
10
8
6
4
IB = 2 mA
Common emitter
Tc = 25°C


IC – VBE
Collector current IC (A)
Base-emitter voltage VBE (V)
Tc = 100°C
25
−25
Common emitter
VCE = 5 V


VCE (sat) – IC
DC current gain hFE
Collector current IC (A)
Common emitter
VCE = 5 V
Tc = 100°C
−25
25


VCE (sat) – IC
Collector-emitter saturation voltage VCE (sat) (V)
Collector current IC (A)
Common emitter
IC/IB = 10
Tc = 100°C
25
−25


fT – IC
Transition frequency fT (MHz)
Collector current IC (mA)
Common emitter
VCE = 10 V
Tc = 25°C


Safe Operating Area
Collector current IC (A)
Collector-emitter voltage VCE (V)
IC max (pulsed)*
IC max (continuous)
1 ms*
10 ms*
100 ms*
DC operation
Tc = 25°C
*: Single nonrepetitive pulse
Tc = 25°C
Curves must be derated linearly
with increase in temperature.
VCEO max

RESTRICTIONS ON PRODUCT USE

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